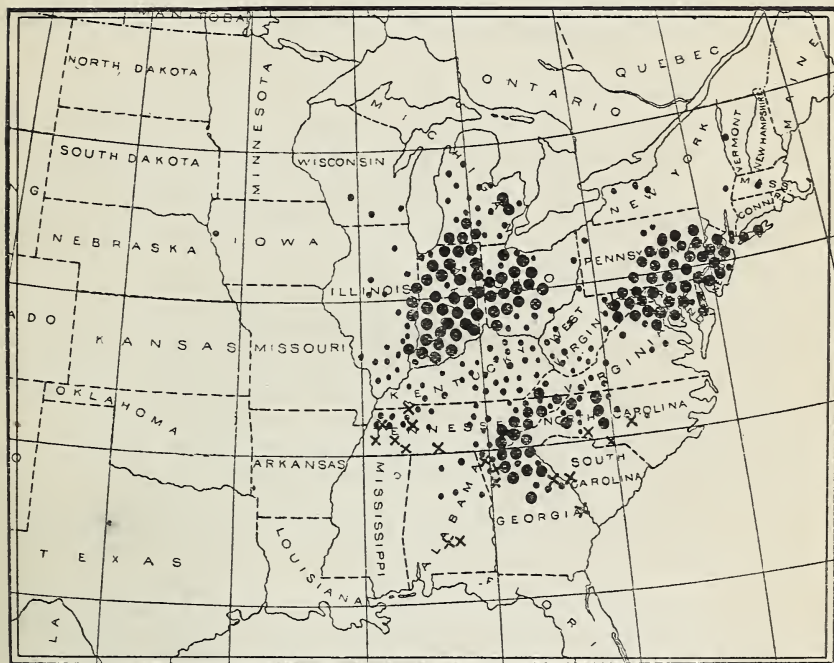


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# THE "17-YEAR LOCUST" IN 1919



Territory in which the Periodical Cicada will appear this year. Large dots indicate dense and small dots scattering colonies of 17-year Brood 10. Crosses (x) indicate the colonies of 13-year Brood 18.

UNITED STATES DEPARTMENT OF AGRICULTURE  
CIRCULAR 127  
OFFICE OF THE SECRETARY

### When the "17-Year Locusts" Come.

**T**HE year 1919 will be one of the "big locust years." But entomologists of the United States Department of Agriculture see nothing alarming in the prospect.

The periodical cicada, the real name of the insect commonly called "locust," will appear this year in the following States: Alabama, District of Columbia, Delaware, Georgia, Illinois, Indiana, Iowa, Kentucky, Maryland, Massachusetts, Michigan, New Jersey, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, Vermont, Virginia, West Virginia, and Wisconsin.

The injury done by the periodical cicada consists almost wholly in chiseling grooves in the branches of trees for depositing eggs. This injury always appears to be greater than it actually is. Popular alarm is usually out of proportion to general damage.

Young fruit trees are sometimes killed by the cicada. The precautionary measures are: Wherever practicable, defer putting out young fruit trees in heavily infested regions until next year; postpone budding operations; do no pruning this spring.

When the insects begin coming out, cover young fruit trees with cheese cloth or other material. Hand pick the insects from young fruit trees or spray them with pyrethrum powder, kerosene emulsions, or a solution of carbolic acid or acetic acid.

Later, when the insects are ready to begin laying, spray with whitewash or Bordeaux mixture any young trees that can not be covered with cloth. No precautionary or control measures need be taken unless cicadas are very abundant.

## BIG "17-YEAR-LOCUST" BROOD DUE THIS YEAR.

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THE most interesting insect in the world, the periodical cicada, is going to be seen, perhaps in very large numbers, during the coming spring and early summer over large regions of the United States where this brood has not appeared before for seventeen years and over other regions where another brood appeared thirteen years ago. This is the insect commonly referred to as the "17-year locust," a name that is incorrect in at least two particulars: (1) It is not a locust at all, that name being properly applied only to members of the grasshopper family, and (2) while it has a 17-year period, it also has a 13-year period. It has been so long miscalled by the name of locust, however, that there is no hope of divesting it of that incorrect appellation, and in the regions where there is the longer period of recurrence, it will continue to be known as the "17-year locust," and in the areas of the shorter recurrence period, as the "13-year locust." The scientifically accepted name of periodical cicada, however, is the only one that exactly fits.

That this is the most interesting insect in the world will hardly be questioned anywhere, and it is the most interesting because it is the most anomalous, or, possibly, because it has always appeared to be so mysterious. The fact that it appears in countless numbers one year, then is not seen again for half the average life time of human beings and then suddenly appears again in countless numbers, has mystified the popular mind and has woven many superstitions about the cicada. When it is known that the insect spends the thirteen or seventeen years in slow development beneath the ground and emerges at almost exactly the same spot where it entered the ground thirteen or seventeen years before—then the mystery disappears, but the interest, if anything, is intensified. One of the queerest things in nature is that in spite of such extremely slow growth in their subterranean habitat, all the millions of individuals attain maturity and burst from the ground at almost the same moment.

### CICADA'S APPEARANCE FORETOLD ACCURATELY.

Every "locust year" is, in some sort, a year of fear and dread. It appears to have been so with the savages and has remained so with their civilized successors, notwithstanding the fact that the cicada has



been under investigation for well over 200 years, and the appearances of the swarms are foretold by entomologists as accurately as eclipses of the moon are foretold by astronomers. People have fancied that they could detect in the cry of the cicada a resemblance to the name of the monarch, Pharaoh, that persecuted the Israelites, and that belief added to the somewhat dolorous sound has served to make the cry of the cicada generally an unwelcome one. Very long ago some superstition attached to the dark bars of the filmy wings. These bars are always in the shape of the letter W, but few people remember that through a period of thirteen or seventeen years, and great significance is attached to it at each recurrence. Always some prophet has arisen to announce that the W on the locust's wings means "war." Since this outbreak will come just at the conclusion of the greatest war, and when even the imagination of the most doleful prophet could hardly conjure up the likelihood of another one, some new calamity will evidently have to be suggested this time. But no doubt the cicada will, as usual, be greeted as a harbinger of disaster, and as usual, there will be reports of deaths caused by stings of the cicada, a belief that has persisted in spite of positive proof that the cicada has no sting, that only by the extremest accident could it inflict a wound either with bill or ovipositor, and that it could not, in any case, inject a poison.

Any attempt to dispel the myths that recur as faithfully as those pertaining to the cicada is likely to be unavailing since those who believe in them probably will continue to do so still regardless of anything that may be said. There is, however, an erroneous belief that may be somewhat shattered by a statement of facts and that constitutes the main reason for publishing this circular.

#### INJURY IS USUALLY OVERESTIMATED.

Upon every appearance of large broods of the cicada, fear is aroused that trees will be destroyed. There would seem to be some ground for such a fear. The number of the insects is so tremendous that one can hardly understand how they can deposit their eggs in the young and tender branches of the trees without killing them. Yet the fact remains that there have been outbreaks of cicadas in some sections of the United States in most of the years since this country was discovered and that no very grave damage ever has been done. Very young fruit trees sometimes are killed or seriously injured, but little or no permanent injury is done to forest trees or mature trees of any kind and measures of protection can be employed that will save the young and tender stock from serious injury.

Another source of excessive apprehension is the tendency on the part of many persons to confuse the periodical cicada, misnamed "locust," with the grasshoppers that are properly called locusts. Except that both occur in great numbers, there is no similarity between the two insects. Outbreaks of the real locust are irregular, while the swarms of the "17-year locust" appear regularly at intervals of 17 or 13 years, according to race. The grasshoppers or real locusts sweep over wide areas, sometimes destroying practically all green things as they go. The "17-year locust" spends its whole life practically in one spot and does no injury except to trees. The real locust chews its food and is a tremendous feeder. The "17-year locust" sucks its food and eats very little—indeed, the fact of its taking any food in the adult stage was not definitely determined until 1902. No appreciable injury results from the small quantities of plant juices that it takes as food. The only calculable damage inflicted by the "17-year locust" results from slits made by the female in the tender branches of trees for depositing her eggs.

Inasmuch as the coming 1919 brood of cicadas may be one of the largest on record, it is particularly important to allay excessive fear of destruction to timber as well as to have people on guard, so that the few preventive measures possible may be applied. The belief that the 1919 swarms will be unusually large is based on the fact that the 17-year brood coming out this year is Brood 10, perhaps the largest of the 17-year broods, and that Brood 18 of the 13-year race comes out at the same time. The year 1868 was the greatest locust year in history. In that year Brood 19, the largest of the 13-year broods, appeared in conjunction with Brood 10, the two combining to make an unprecedented infestation. The coincidence of the largest 17-year brood with a smaller 13-year brood this year will not bring about conditions approaching those of 1868.

The United States Department of Agriculture has long kept close check on all of the broods of both races and is able to say with accuracy just when and over what territory any brood will appear. The work of classifying and locating the various broods with their periods of recurrence began a long while ago and was attended for some time with considerable confusion. It was generally believed that the period of recurrence was seventeen years, but every once in a while there would be an outbreak that failed to coincide with any possible 17-year period and investigators were getting different results, with periods apparently ranging all the way from 10 years to 17 years. All this work was done on the assumption that all periodical cicadas were alike and the records were getting decidedly snarled before the discovery that the 13-year race is separate and distinct from the 17-year race.

### EARLY INVESTIGATORS DISCOVERED 13-YEAR RACE.

The honor of this discovery belongs, perhaps, to Dr. D. L. Phares, an independent investigator of Woodville, Miss., who, on May 17, 1845, published in the Woodville Republican an article in which he asserted the existence of a 13-year race, and elaborated the belief that most of the locusts in the southern territory were of that race. However, the paper in which he published his report was of limited and local circulation, and knowledge of the discovery did not gain currency. At about the time Dr. Phares made the investigation that led to the discovery of the 13-year race, similar investigations were in progress by Dr. Gideon B. Smith, another independent investigator, of Baltimore, Md. Dr. Smith left an extremely valuable manuscript, which was never published, in which he stated the same conclusion as did Dr. Phares. There is evidence, however, that Smith had been in correspondence with Phares and that he at first rejected the evidence of the 13-year family and accepted it only after several years' additional investigation. The fact was not definitely accepted until 1869, the year following the greatest locust outbreak, when Dr. B. D. Walsh and Professor C. V. Riley recorded the investigations that became the basis of the accumulated knowledge of the Department of Agriculture.

With the existence of the 13-year family definitely recognized, the work of mapping the various broods was greatly simplified and in no great time was made complete. The perfecting work was done very largely by Mr. C. L. Marlatt, assistant chief of the Bureau of Entomology and chairman of the Federal Horticultural Board of the United States Department of Agriculture. Mr. Marlatt renumbered the broods and mapped the territory in which they occur, and references to them now usually are made in Marlatt nomenclature rather than in the older nomenclature of Walsh, Riley, Smith and Phares.

The two broods due this year are Brood 10, which belongs to the 17-year race, and Brood 18, which belongs to the 13-year race. The former will appear mostly in northern territory and the latter in southern territory.

### BROOD 10 MOST WIDELY DISTRIBUTED.

Brood 10 has the widest distribution of any brood. Beginning at the eastern extremity of Long Island, it sweeps west and south to the Mississippi River at Cairo, Ill., and extends as far north as central Wisconsin and as far south as middle Georgia, with some isolated colonies as far northeast as upper Vermont, and one as far west as the boundary line between Iowa and Nebraska. The whole or portions of twenty States are included within this range. There are three regions of greater occurrence, one covering New Jersey, Maryland, and



eastern Pennsylvania; another covering all of Indiana, the greater part of Ohio and southern Michigan; and a third covering western North Carolina, east Tennessee and northern Georgia. The records of this brood have been kept from 1715 to 1902, the date of its last appearance. In 1902, for the first time since very careful study of the cicada began, it was not accompanied by a 13-year brood, and its actual range was more nearly determined than before, although the old limits of distribution were pretty generally confirmed. In the regions of greatest occurrence this brood will probably appear in dense swarms here and there, but will not cover the territory uniformly.

The distribution, by States and counties, follows:<sup>1</sup>

ALABAMA.—Clebune, Jackson, Jefferson, Morgan, (St. Clair.) (?)

DISTRICT OF COLUMBIA.\*

DELAWARE.—(Kent), *Newcastle*,\* *Sussex*.\*

GEORGIA.—*Banks*,\* *Chattooga*, *Dade*, *Dawson*, *Fannin*,\* *Forsyth*,\* (Franklin), *Gilmer*,\* *Gordon*,\* *Greene*, *Habersham*,\* *Hall*,\* *Jackson*,\* *Lincoln*, *Lumpkin*,\* *Murray*,\* *Newton*,\* *Oglethorpe*, *Pickens*,\* *Rabun*,\* *Union*,\* *Walker*, *Walton*, *White*,\* *Whitfield*, *Wilkes*.

ILLINOIS.—*Alexander*, *Clark*,\* *Crawford*,\* *Cumberland*, (Dewitt), *Edgar*,\* *Edwards*, (Gallatin), *Hamilton*, *Hardin*, (Iroquois), *Jackson*, (Kane), *Lawrence*, *Logan*, (Pope), *Saline*, *Tazewell*, *Union*, *Vermilion*,\* *Wabash*, *White*,\* *Williamson*.

INDIANA.—*Adams*,\* *Allen*, *Bartholomew*,\* *Benton*, *Blackford*,\* *Boone*,\* *Brown*,\* *Carroll*,\* *Cass*,\* *Clark*,\* *Clay*,\* *Clinton*,\* *Daviess*,\* *Dearborn*,\* *Decatur*,\* *Dekalb*,\* *Delaware*,\* *Dubois*,\* *Elkhart*,\* *Fayette*,\* *Floyd*,\* *Fountain*,\* *Franklin*,\* *Fulton*,\* *Gibson*,\* *Grant*,\* *Greene*,\* *Hamilton*,\* *Hancock*,\* *Harrison*,\* *Hendricks*,\* *Henry*,\* *Howard*,\* *Huntington*,\* *Jackson*,\* *Jay*, *Jefferson*,\* *Jennings*,\* *Johnson*,\* *Knox*,\* *Kosciusko*,\* *Lake*, *Laporte*,\* *Lawrence*,\* *Madison*,\* *Marion*,\* *Marshall*,\* *Martin*,\* *Miami*,\* *Monroe*,\* *Montgomery*,\* *Morgan*,\* *Noble*,\* *Ohio*,\* *Orange*,\* *Owen*,\* *Parke*,\* *Perry*,\* *Pike*,\* *Porter*,\* *Posey*, *Pulaski*,\* *Putnam*,\* *Randolph*,\* *Ripley*,\* *Rush*,\* *St. Joseph*,\* *Scott*,\* *Shelby*,\* *Spencer*,\* *Starke*,\* *Steuben*,\* *Sullivan*,\* *Switzerland*,\* *Tippecanoe*,\* *Tipton*, *Union*,\* *Vanderburg*,\* *Vermilion*,\* *Vigo*,\* *Warren*,\* *Warrick*,\* *Washington*,\* *Wayne*,\* *Wells*,\* *White*.\*

IOWA.—Woodbury.

KENTUCKY.—*Allen*, *Anderson*, *Barren*, *Bath*, *Bell*, *Boone*,\* *Boyd*, *Breckinridge*,\* *Butler*, *Caldwell*, *Campbell*,\* *Carroll*,\* *Carter*, *Casey*, *Christian*, *Clay*, *Clinton*, *Crittenden*, *Cumberland*, *Daviess*,\* *Edmondson*, *Fayette*, *Fleming*, *Franklin*, *Gallatin*,\* *Garrard*, *Grant*,\* *Grayson*,\* *Green*, *Greenup*, *Hancock*,\* *Hardin*, *Harrison*,\* (Hart), *Henderson*, *Hickman*, *Hopkins*, *Jefferson*,\* *Johnson*, *Kenton*,\* *Knox*, *Larue*, *Laurel*, *Lawrence*, *Lee*, *Leslie*, *Letcher*, *Lewis*, *Lincoln*, *Livingston*, *McLean*,\* *Madison*, *Magoffin*, *Martin*, *Meade*,\* (Mercer), *Monroe*, *Nelson*, *Nicholas*, *Ohio*,\* *Oldham*,\* *Owen*,\* *Owsley*, *Pendleton*,\* *Pike*, *Scott*, *Shelby*,\* *Trigg*, *Trimble*,\* *Union*, *Warren*, *Washington*, *Wayne*, *Webster*, *Whitley*, *Wolfe*.

MARYLAND.—*Allegany*,\* *Anne Arundel*,\* *Baltimore*,\* *Calvert*, *Caroline*, *Carroll*,\* *Cecil*,\* *Frederick*,\* *Garrett*,\* *Harford*,\* *Howard*,\* *Kent*,\* *Montgomery*,\* *Prince George*,\* *Queen Anne*, *Talbot*,\* *Washington*,\* *Wicomico*.

MASSACHUSETTS.—(Bristol) (?), Worcester (?).

<sup>1</sup> County names in italics are confirmations of old records, names in parentheses are old records unconfirmed, and starred names indicate occurrence in swarms.

MICHIGAN.—(Barry), *Branch*\*, *Calhoun*\*, *Cass*\*, (Eaton), *Genesee*\*, (Gratiot), Hillsdale, Ionia, (Jackson), *Kalamazoo*\*, *Lake*, *Lenawee*, (Livingston), Missaukee, (Monroe), Muskegon, Newaygo, Oakland\*, Saginaw, *St. Clair*, *St. Joseph*\*, Van Buren, *Washtenaw*\*, (Wayne).

NEW JERSEY.—*Burlington*\*, *Camden*\*, Cumberland\*, Gloucester\*, *Hunterdon*\*, Mercer\*, *Middlesex*\*, *Monmouth*\*, *Morris*\*, Ocean, (Passaic), Salem\*, *Somerset*\*, Warren\*.

NEW YORK.—Columbia, *Kings*, (Monroe), Nassau, (Niagara), Ontario, Queens\*, *Richmond*, Suffolk\*.

NORTH CAROLINA.—Alexander, Alleghany, Burke\*, (Caldwell) (?), Catawba, *Cherokee*\*, Davidson, *Davie*\*, *Lincoln*, Stokes, *Surry*\*, (Wake) (?), *Wilkes*\*, *Yadkin*\*.

OHIO.—(Adams), Allen\*, Auglaize, *Butler*\*, *Champaign*\*, *Clark*\*, (Clermont), Clinton, (Columbiana), Crawford\*, Darke\*, *Delaware*\*, *Fairfield*\*, *Franklin*\*, Gallia, *Greene*\*, *Hamilton*\*, Hancock, Huron, Jackson\*, Logan\*, *Lucas*\*, Madison\*, Marion\*, Mercer\*, *Miami*\*, *Montgomery*\*, Morrow\*, *Pickaway*\*, (Pike), Preble\*, Putnam\*, (Sandusky), *Seneca*\*, Shelby\*, Union\*, Van Wert, Warren\*, *Wyandot*\*.

PENNSYLVANIA.—Adams\*, *Bedford*\*, *Berks*\*, *Blair*\*, *Bucks*\*, *Carbon*\*, *Chester*\*, Clinton, Columbia\*, *Cumberland*\*, *Dauphin*\*, *Delaware*\*, *Franklin*\*, *Fulton*\*, *Huntingdon*\*, *Juniata*\*, Lackawanna\*, *Lancaster*\*, *Lebanon*\*, *Lehigh*\*, Luzerne\*, Lycoming, Mercer, *Mifflin*\*, *Monroe*\*, *Montgomery*\*, Montour\*, *Northampton*\*, *Perry*\*, *Philadelphia*\*, *Schuylkill*\*, *Snyder*\*, *Somerset*\*, *Union*\*, *York*\*.

TENNESSEE.—Benton, Bledsoe, *Blount*\*, Bradley, Carroll, Carter, Claiborne, Cumberland, Dyer, Gibson, Grainger, Greene\*, *Hamblen*\*, *Hamilton*\*, Hancock, Hawkins\*, (James) (?), Jefferson\*, *Johnson*\*, *Knox*\*, *Loudon*\*, *McMinn*\*, Montgomery, Obion, *Polk*\*, Rhea, Roane, Robertson, (Scott), Sevier\*, Smith\*, (Sullivan), *Washington*\*, Weakley, White, Williamson.

VERMONT.—(Rutland).

VIRGINIA.—*Alexandria*\*, *Augusta*, (Carroll), *Clarke*\*, *Fairfax*\*, Fauquier, *Fredrick*\*, Grayson, Lee\*, *Loudoun*\*, Orange, Prince William\*, Roanoke, (Spottsylvania), Warren\*, Wise, Wythe.

WEST VIRGINIA.—Barbour, *Berkeley*\*, Boone, Cabell, *Grant*\*, Greenbrier, *Hampshire*\*, *Hardy*\*, Harrison\*, *Jefferson*\*, Lincoln, Logan, McDowell, Mason, *Mineral*\*, Mingo, Monroe, *Morgan*, Ohio, Pocahontas, Preston\*, *Putnam*, Raleigh, Roane, Tucker\*, Wayne.

WISCONSIN.—Dane, (Sauk).

Brood 18, the 13-year brood that comes out this year, is comparatively a small brood and is made up of scattered colonies rather than of the dense and compact swarms that mark the larger broods. Five States are affected by it—Alabama, Georgia, North Carolina, South Carolina, and Tennessee—but it touches only limited areas of these States. In Alabama only two counties are affected, Lowndes and Montgomery. Georgia counties affected are Cherokee, Cobb, Gordon, Oglethorpe, and Screven; North Carolina counties are Anson, Lincoln, and Moore. In South Carolina only one county, Edgefield, is affected. The Tennessee counties touched are Carroll, Dyer, Lauderdale, Lincoln, McNairy, Madison, and Stewart. This brood is an unimportant one and will probably appear in such scattering numbers as generally to escape observation.

Overlapping of the two 1919 broods will occur only in the States of Tennessee, North Carolina, Georgia, and Alabama. The locust population will not be so dense along the border line between the two races, neither will it be so widespread as in 1868, but it will be, nevertheless, one of the large locust years, unless weather and other conditions should serve to check the outbreak. It sometimes happens that a late spring freeze over varying areas destroys the greater part of the locusts before the time arrives for depositing eggs, and other natural causes frequently tend to diminish the possible devastation.

#### CICADAS WILL APPEAR IN MAY.

Latitude does not appear to affect materially the time of emergence from the ground, the cicada in the Lake States coming out within a week or two of the same time as in the Gulf and South Atlantic States. This date ordinarily ranges from the last week in May to the first week in June, and the shrieking hosts may be looked for throughout the whole territory indicated at about that time. There is the possibility, however, of a slightly earlier appearance than usual this year. The extremely mild winter may have had the effect of accelerating somewhat the development of the pupae. If the weather should continue abnormally warm until after May 1, the appearance of the cicada somewhat ahead of schedule would not be surprising. Late in May or early in June the under sides of leaves on practically all trees in dense brood areas will be studded with the cast skins and every wooded place will be resounding with the shrill drums.

A month later the deposition of eggs in branches will have become general. Of forest trees, the oak and hickory appear to be preferred, though the cicada deposits eggs in all kinds of trees, with apparent tendency, however, to avoid pines and cedars and such other species as exude gummy substances. Of orchard trees, the apple is the favorite, with peach and pear trees second, and all others, even grapevines, come in for some share of attention. In the case of large trees, only slight and temporary injury is done, but with young orchards and nursery stock the result may be fatal unless some protective measures are adopted.

Fear aroused by the presence of this insect in great numbers is out of proportion to the real damage likely to be done. People in infested sections should not become unduly alarmed, but should apply such methods of control as are possible. In young orchards and nurseries, a good method is the hand collection of the insects at the time of emergence or as soon afterward as possible. Every cicada tries to climb some plant or tree immediately after coming out of the ground and great numbers of them can be shaken off and collected in bags or



umbrellas. This practice may be continued for an indefinite time after emergence and the work should be done very early in the morning or late in the evening when the insects are somewhat torpid and sluggish. If undertaken at the first appearance and repeated each day, control will be facilitated by the fact that most of the insects will be on the young trees or short branches, or on the lower branches of large trees and within comparatively easy reach.

#### COVER YOUNG TREES WITH CHEESE CLOTH.

In exceptional cases, destruction of the cicada may be accomplished with insecticides if applied at the moment of emergence from the ground or shortly after it has shed its pupal skin and is still soft and comparatively helpless. This kind of work can be made very successful in small areas, but could not be applied on a large scale. Best results are obtained with pyrethrum powder, kerosene emulsions, a 2 per cent solution of carbolic acid, or a 15 per cent solution of acetic acid, sprayed directly on the insects.

Not much success has been attained with washes or other applications to prevent oviposition. Ill-smelling substances appear not to repel the cicada. There are some indications that the insect dislikes to sit on a white surface and therefore whitewash is believed to possess some efficacy as a preventive of oviposition, though the cicada will oviposit on whitewashed trees if no more pleasing place can be found. A spray of Bordeaux mixture is also believed to have some value as a preventive.

Certain precautionary methods, however, are of more importance than the curative ones. As indicated elsewhere, the insects appear in great numbers in some portions of the territory covered, while in others only scattered individuals are to be found. In locations where dense occurrence is indicated, the safe practice would be to defer the planting of fruit trees until the spring of 1920, but this practice can not be followed in all cases. Many orchardists have purchased trees and prepared the ground for planting them. Postponement would entail not only a considerable monetary loss, but the loss of a year's tree growth as well.

The prospective tree planter, in most instances perhaps, has been a resident of the neighborhood long enough to remember in what numbers the cicada appeared there in 1902. If not, he should consult residents who remember the last visitation. In areas where it appears likely that the infestation this year will be heavy, newly planted trees should be covered with cheese cloth or other material that will afford the desired protection without undue cost. The actual placing of the covering on the trees may be deferred until the insects appear and their relative number can be ascertained. In many instances, even



where great numbers of cicadas are to be expected, the actual number may be so small as to make it unnecessary to place the coverings. Once placed, they should be allowed to remain until all the insects have disappeared.

In areas where cicadas are likely to be abundant, the pruning of young orchards should be deferred until after the insects have disappeared. Special pains should then be taken to remove as much of the injured wood as possible and to reshape any trees that may be in need of it.

Orchards adjacent to woods or on newly cleared lands are likely to suffer most. Those at some distance from wooded areas, though in localities of dense infestation, probably will not suffer severely.

Complete as the accumulation of knowledge concerning the cicada appears to be, efforts will be made to secure additional facts this year. The Bureau of Entomology has requested county agricultural agents and crop reporters throughout the territory covered by the two broods to make reports, showing the date of first appearance or emergence of the cicada, the date of its general disappearance and the numbers—whether very numerous or scattering, or whether only a few individuals occur. It is possible, of course, that the cicada may not appear this year in some counties or localities where it appeared seventeen or thirteen years ago. The broods are constantly growing smaller, it is believed. Therefore, a negative record is often quite as valuable as one of actual occurrence.

# Keep Your Liberty Bonds

The War Loan Organization of the Treasury Department has sent the following statement to all publications:

"Publications cooperating in the Victory Liberty Loan Campaign can be of material assistance by voluntarily publishing regularly some such invitation as the following:

## Watch the Stock Peddlers !

READERS: Get the names and addresses of all persons and companies offering you speculative or doubtful stocks and securities, particularly if in exchange for your Liberty Bonds or War Savings Stamps, with copies of their "literature." Mail them promptly for investigation to the

FEDERAL TRADE COMMISSION  
WASHINGTON, D. C.

HELP THE VICTORY LIBERTY LOAN

"Upon receipt of such information the Federal Trade Commission will call for full reports in proper cases. The Federal Trade Commission Act provides a penalty of a fine and / or imprisonment for those who fail or falsely report to the Commission. It may make public so much of the information obtained as may be in the public interest and it can prevent unfair methods of competition and misrepresentations in commerce."

*Sign no armistice*



*with extravagance*



